Medical Community Involvement in a Breast Cancer Screening Promotional Project

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Synopsis

The analysis, mobilization, and involvement of medical communities in two counties targeted for intervention by the Washington State Community Breast Cancer Screening Project is described.

Principles of community organization were applied to the health care sectors in the counties, and the PRECEDE-PROCEED model was used as a conceptual framework for considering individual physician behavior. Quantitative and qualitative medical community assessment methods included a demographic study, a survey of primary care physicians, personal interviews with physicians, and medical office staff focus groups.

In both intervention areas, physician planning groups selected, developed, and helped implement intervention activities targeting the health care sectors. These activities included informational mailings to physicians, training of medical office staff members and clinical mammographers, and support for a reminder system.

The experience demonstrated that physicians practicing in medium-sized cities are willing to be active in community disease prevention programs.

IT HAS BEEN CLEARLY demonstrated that mammography can reduce significantly breast cancer mortality among women ages 50 or older (*1,2*). Consequently, the National Cancer Institute (NCI) issued cancer control objectives for the year 2000 that include the provision of routine mammographic screening to 80 percent of women in this age group (*3*). As part of the effort to reach this goal, the NCI Breast Cancer Screening Consortium was formed in 1987 among a group of six research institutions in California, Massachusetts, New York, North Carolina, Pennsylvania, and the State of Washington (*4*). The group's primary goal was to investigate community-based methods of achieving an increase in regular mammography use by women ages 50–75.

Physician endorsement has been shown to be a powerful motivator for breast cancer screening participation by women (*5,6*). Furthermore, the involvement of physicians in community disease prevention programs is believed to increase the likelihood of success (*7*).

At the Fred Hutchinson Cancer Research Center in Seattle, the Washington component of the NCI consortium, the emphasis is on health care sector involvement in promotional activities. Indeed, one of the objectives of those of us at the center was to explore ways to involve practicing physicians in a community organization effort. Relatively little has been written about physicians' participation in community studies aimed at changing health behavior. In this paper we describe the analysis, mobilization, and involvement of physician communities in two counties targeted for intervention by the Hutchinson center's Washington Community Breast Cancer Screening Project (CBCSP).

Background

The box on page 492 gives an overview of the sequence and various activities of the Washington CBCSP. The CBCSP involved all or part of four counties, including a medium-sized city with a

Sequence of Activities in Intervention and Control Counties in the Washington Community Breast Cancer Screening Project, 1989–93

	1989		1990		1991		1992		1993	
Activities	C	I	C	I	C	I	C	I	C	I
Community demographic study	X	X								
Health care sector demographic study	X	X								
Survey of age-eligible women	X	X			X	X			X	X
Survey of primary care physicians	X	X							X	X
Focus groups of women				X						
Focus groups of medical staff members				X						
Interviews with community members				X						
Interviews with physicians				X						
Formation of community advisory board				X						
Formation of physician planning group				X						
Design and implementation of project activities				X		X		X		

C = Control counties
I = Intervention counties

population of between 30,000 and 60,000 and surrounding rural areas. All are largely encapsulated in terms of health care delivery. Two of the counties received interventions, while the others were controls for evaluation purposes. The intervention counties are both located in the Puget Sound area of western Washington. One is 30 miles north of metropolitan Seattle (northern community), while the other is 60 miles south of Seattle (southern community). The intervention target groups were women in the 50–75 age group and health care professionals. In both intervention counties, we formed community advisory boards to oversee the project as a whole and to select, prioritize, develop, and implement activities targeting women. This part of the project will be the focus of a future report.

Conceptual Framework

We applied community organization principles to the health care sectors in the CBCSP intervention counties (*8–10*). In addition, we used the PRECEDE-PROCEED model as a conceptual framework for considering physician behavior (*11–13*). Both community organization theory and use of the PRECEDE-PROCEED model are discussed subsequently.

Community organization. During the last two decades, increasing attention has been paid to community organization as a means of achieving large-scale change in preventive behaviors (*9*). Intervention approaches directed at a person reach a relatively small number of people and often have only a short-term impact. In contrast, community approaches can potentially change local norms with respect to a behavior, resulting in widespread and persistent effects (*10*). A number of recent health promotion initiatives have used a community approach (*14–18*). Most of these efforts addressed multiple risk factors related to cardiovascular disease, with the goals of changing smoking, dietary, and cholesterol screening behavior (*14–16*).

Key features of successful community organization projects are a thorough understanding of the community, active participation by members of the community, use of existing community structures, involvement of all relevant local constituencies, and incorporation of multiple intervention strategies (*8*). The stages of community organization include community analysis and mobilization, the formation of local advisory structures, and the design, initiation, and implementation of intervention activities (*8,9*).

PRECEDE-PROCEED. The PRECEDE-PROCEED framework is a widely used planning model and has been applied previously to both community and health care settings (*11–13,18,19*). Specifically, it has been used to guide State health department projects, to plan public cancer education programs, and to serve as an organizational framework for developing health promotion training directed at physicians and nurses (*11,18*).

According to this model, factors affecting behavior can be broadly grouped as predisposing, enabling,

and reinforcing, although the three groupings are not necessarily mutually exclusive (*11–13*). Predisposing factors include a person's knowledge, attitudes, beliefs, and perceptions. Enabling factors are those skills, resources, or barriers that can facilitate or hinder positive change. Feedback that may encourage or discourage continuation of a behavior is considered reinforcing (*11*). The box on page 495 summarizes our application of the PRECEDE-PROCEED framework to factors potentially affecting physicians' use of mammography. We also considered potential project activities of the health care sector within the context of this model (table 1).

Table 1. Application of the PRECEDE-PROCEED Model to intervention planning, Washington Community Breast Cancer Screening Project, 1989–93

Possible health care sector intervention activities	*Factors potentially affected*		
	Predisposing	*Enabling*	*Reinforcing*
Presentations by local physicians	X		X
Informational mailings from local medical groups	X		X
Continuing medical education	X		
Medical office staff training		X	
Provision of patient education materials		X	
Reminder system support		X	

Medical Community Analysis

Successful implementation of community programs requires an accurate analysis and understanding of local resources, social structures, and needs (*8,20*). Ideally, both quantitative and qualitative data collection methods are used during the analysis phase of community programs (*20,21*). Our analysis of the two medical communities included a demographic study, a survey of primary care physicians, personal interviews with physicians, and medical office staff focus groups (see box on page 497). Details of the community analysis methods and pertinent results are described in turn.

Demographic study. Data from a Washington State Medical Association publication, county medical society rosters, and telephone books were used to enumerate hospitals, clinics, radiology facilities, and physicians. In 1989, the northern community had four hospitals (two general hospitals and two small community hospitals) and seven mammography facilities. Two hospitals and four radiology facilities offering mammography were located in the southern community. Both counties had a large multispecialty clinic with satellite primary care clinics, and outpatient facilities operated by a Washington health maintenance organization (HMO), Group Health Cooperative (GHC). The HMO's penetration was relatively higher in the southern than the northern community and, consequently, a greater proportion of physicians worked at large clinics rather than individually or as small group practitioners.

Primary care physician survey. We contacted the office receptionists of all primary care physicians (family or general practitioners, general internists, and gynecologists), identified by the demographic study, to ascertain if physicians provided care to at least some women in the 50–75 age group. Physicians thereby judged eligible for inclusion were mailed questionnaires. The study sample included 115 northern community and 77 southern community physicians. Initial nonrespondents received a further mailing and telephone followup.

We asked physicians about the proportion of asymptomatic women for whom they ordered regular mammography and their usual screening interval for women ages 50 or older. Respondents also indicated their agreement or disagreement with a series of statements concerning the effectiveness of mammography. Other questions assessed the degree to which perceived attributes of the procedure had negatively affected the physicians' use of screening mammograms.

Additionally, the survey instrument included questions that addressed the perceptions of physicians concerning community use of mammography and the local consensus with respect to appropriate screening intervals. Finally, we assessed the prevalence of mammography reminder systems. Since GHC has a centralized breast cancer screening program that affects how individual physicians order mammography, physicians practicing in this setting were only asked to answer selected questions.

Completed questionnaires were returned by 98 physicians (85 percent) of those in the northern community and 60 (78 percent) of those in the southern community. Key findings were that most respondents believed screening mammography is effective, cost issues had adversely affected physician referral for mammograms, reminder system use was relatively low, and there was a lack of consensus about appropriate mammography intervals (table 2).

Physician interviews. Physicians were identified for personal interviews by position and reputation (*22*).

Table 2. Primary care physician survey results, by percentages, Washington Community Breast Cancer Screening Project, 1989–93

Variable	Northern community (N=98)	Southern community (N=60)
Mammography practices[1,2]		
Screen women annually	68	65
Order for 90 percent or more of asymptomatic women	51	41
Predisposing factors		
Beliefs about mammography:[3]		
Detects cancers not found by physical breast examination	95	86
Detects cancers at an early stage	97	95
Reduces mortality[4]	90	78
Factors negatively affecting mammography use somewhat or greatly[1,2,5]:		
High price	58	61
Inadequate insurance	66	63
Cost-effectiveness[4]	11	29
Patient discomfort	22	18
Patient inconvenience	28	26
Radiation exposure level	8	13
Time and effort involved	6	8
Enabling factors[1]		
Mammography reminder system exists for:		
Physician[4]	63	40
Patient[4]	49	21
Reinforcing factors[2]		
Perceptions about local mammography use:		
Most physicians order regularly	37	22
Consensus exists concerning appropriate screening interval[4]	53	26

[1]Percentages are based on responses from non-HMO physicians; N=91 for the northern community and N=39 for the southern community.

[2]These questions were specific to women ages 50–75.

[3]Physicians were asked to indicate whether they agreed, neither agreed nor disagreed, or disagreed with statements about effectiveness; respondents indicating agreement were defined as having a positive belief.

[4]The chi-square test showed a statistically significant difference between the northern and southern communities ($P < 0.05$).

[5]Physicians were asked to indicate the degree to which various factors had affected mammography use on a scale of 1-7; 1 = not at all, 2-3 = slightly, 4-5 = somewhat, and 6-7 = greatly.

Our initial meetings were with physicians holding key positions such as the county medical society presidents and hospital medical directors. We then interviewed physicians identified as being influential in the medical community or as having a particular interest in breast cancer screening. Care was taken to ensure all organizational interests and specialties involved in breast cancer screening, diagnosis, and treatment (primary care, oncology, radiology, and surgery) were represented during the process. Interviewing continued until we judged that all key physicians had been interviewed, and no new useful information was being obtained.

A physician and a nurse conducted the interviews in a semistructured way using open-ended questions. Discussion focused on local breast cancer screening activities and issues, medical organizations, physician meetings, local health care sector relationships, and potential program activities. In the northern community, we solicited 33 interviews and completed 28 (85 percent). We approached 21 southern community physicians, and all agreed to be interviewed.

Many physicians responded candidly to questions about relationships between health care institutions and medical groups in their community. The interviews revealed that there was a combined medical staff for the two general hospitals in the northern community, and the main sectors with respect to referral patterns were the multispecialty group clinic and nonaffiliated practitioners. In the southern community, by contrast, relations between the multispecialty group clinic and other physicians were collaborative, but the two hospitals did not have a combined medical staff and interacted little. In both communities, physicians were concerned that health care institutions might perceive the project as an opportunity for gaining a competitive advantage.

Hospital cancer committee leaders influenced breast cancer screening in both communities. The county medical societies dealt primarily with political and economic issues and did not reach large numbers of community physicians through regular meetings. In the northern community, physicians identified hospital staff and primary care physician meetings as good forums for information dissemination. Formal 8-hour continuing medical education sessions addressing breast cancer screening had recently been held in both intervention counties. Additionally, the majority of interviewed physicians believed that activities aimed at increasing breast cancer screening through practice system reorganization would be more enthusiastically received than educational offerings.

Medical office staff focus groups. We conducted seven medical office staff focus group sessions in the intervention areas (*23*). Sessions variously included personnel from HMO facilities, multispecialty group clinic sites, large family practice clinics, and the offices of individual practitioners. Staff members frequently expressed interest in obtaining relevant background information about breast cancer. Participants were generally aware of factors that have been reported to deter women from obtaining mammograms and consistently cited cost, fear of finding cancer, anxiety about radiation, inconvenience, discomfort, and embarrassment as barriers to screening (*24–26*). Medical office staff members believed, however, that patient compliance could be improved if they had better problem-solving skills for addressing barriers to women's use of mammography. Addi-

tionally, nurses felt that teaching breast self-examination skills provides an opportunity to discuss mammographic screening with patients.

Physician Planning Groups

There was a small preexisting physician breast cancer screening committee in the northern community. Furthermore, since mammography requires interaction with the health care system, physicians in both areas thought it would be useful to form physician planning groups (as well as community advisory boards). Factors considered during this process included the importance of involving all major health care organizations (that is, hospitals, large clinics, and the HMO) and relevant medical specialties (table 3) and offering identified opinion leaders (for example, cancer committee chairs) the opportunity for participation. In the northern community, the preexisting physician committee provided a planning group nucleus. To broaden the existing committee's membership, physicians representing the two smaller hospitals in the area, GHC, and primary care specialties were invited to join the group. Only one physician declined to be a planning group member.

The northern community physician planning group had 11 members, and the southern community group had 13. Their roles were to endorse the project, facilitate involvement of local health care institutions, provide technical advice, select and prioritize professional activities directed at the medical sector, develop local intervention implementation plans, and participate in program activities. Over a 2-year period, the northern community physician planning group met 14 times, while the southern group met on 10 occasions. The average attendance in both communities was 6, and a majority of planning group members attended at least half the meetings.

Health Care Sector Intervention Activities

The physician planning groups selected all the health care sector intervention activities. We gave planning group members brief written summaries of potential project activities and verbally provided relevant information compiled from the physician survey and interviews. The planning groups were encouraged to suggest other intervention activities they believed would be useful in their own medical communities. Health care sector activities that occurred in each community are reviewed subsequently (table 4).

Application of the PRECEDE-PROCEED Model to Physician Behavior Towards Mammography Screening, Washington State Community Breast Cancer Screening Project 1989–93

Predisposing Factors

Knowledge, attitudes, beliefs, and perceptions concerning:

- the effectiveness of mammography
- the cost-effectiveness of mammography
- patient barriers to mammography (for example, cost, discomfort, inconvenience)
- third party reimbursement for breast cancer screening
- breast cancer screening guidelines

Enabling Factors

- Trained ancillary staff
- Reminder systems
- Patient education materials

Reinforcing Factors

- Practice or community results from breast cancer screening
- Colleague support of mammography
- Community consensus with respect to mammography issues

'Key features of successful community organization projects are a thorough understanding of the community, active participation by members of the community, use of existing community structures, involvement of all relevant local constituencies, and incorporation of multiple intervention strategies.'

Informational mailings. The physician planning groups periodically sent written communications to local primary care physicians. These mailings provided information about breast cancer screening, introduced various CBCSP activities, and addressed barriers identified by the physician questionnaire. For example, more than half of northern and southern community physicians reported that cost issues had negatively affected their use of screening mammograms. As a result, mailings informed local physicians when the State of Washington mandated third-party reimbursement for mammography during 1990 and Medicare initiated coverage of the procedure in 1991.

Table 3. Southern Community Physician Planning Group membership, Washington Community Breast Cancer Screening Project, 1989–93

Specialty	Organizational representation: Hospital A	Hospital B	Multispecialty clinic	HMO
Family practitioner....		X		
Family practitioner....	X			
Family practitioner....		X		X
Family practitioner....		X		X
General internist.....	X			
Gynecologist		X	X	
Medical oncologist....	X			
Medical oncologist....		X	X	
Radiation oncologist ..	X	X	X	
Radiologist.....	X		X	
Radiologist.....		X		
Surgeon	X			
Surgeon		X		

Table 4. Summary of implemented activities, Washington Community Breast Cancer Screening Project, 1989–93

Health care sector intervention activity	Northern community	Southern community
Presentations to physician groups[1] ...	X	
Informational mailings to physicians ..	X	X
Continuing medical education		X
Medical office staff training	X	X
Provision of patient education materials[2].....	X	X
Reminder system support.....	X	X
Medical office staff newsletter[3].....		X
Provision of silicone breast models[3]..		X
Clinical mammographer training	X	

[1]The southern county planning group felt an introductory mailing would adequately inform local physicians.
[2]Posters and pamphlets were distributed during the office staff training sessions.
[3]These activities were designed to reinforce the office staff training sessions.

Continuing medical education. The primary care provider survey indicated that a large majority of community physicians believed mammography to be an effective screening technique, and the physician interviews suggested continuing medical education sessions would not be well attended. Therefore, the physician planning groups decided not to use project resources to initiate traditional continuing education courses. In the southern community, however, existing opportunities were used to provide physician education (for example, a continuing education program organized by one of the local hospitals).

Office staff training sessions. Most of the physicians we interviewed were positive about training medical office staff members, and each of the physician planning groups selected this as a priority activity. A northern community surgeon helped us develop the program content and materials. Members of the planning groups selected local nurse practitioners to conduct the educational sessions and contacted local physicians to encourage participation. Small group educational sessions were provided at local medical clinics and physicians' offices. The content of the educational program, which was guided by the focus group results, included the provision of local breast cancer-related data, a discussion of the role of nurses and other office staff members as "change agents" who can educate and motivate patients, an overview of breast cancer screening modalities and breast self-examination instruction, and the role-playing of patient scenarios designed to provide office staff members with effective problem-solving skills for addressing barriers to screening.

A total of 25 educational sessions were provided in the northern community and 18 in the southern community. About 55 percent of eligible staff members in the northern community received the training, compared with 40 percent in the southern community. We asked participants to indicate how valuable they found the program as a whole on a 5-point Likert-type scale, where 1 was not very valuable and 5 was very valuable. Mean evaluation scores were 4.3 in the northern community and 4.2 in the southern. The design, implementation, and process evaluation of the office staff intervention has been described in detail elsewhere (*23*).

Clinical mammographer training sessions. Partly as a result of the success of the medical office staff educational sessions, a planning group member in the northern community suggested that a training program be held for local clinical mammographers. The planning group radiologist and a clinical mammographer identified areas of useful program content and speakers, and a task force of local clinical mammographers facilitated implementation of the educational session. The 8-hour Saturday training program was held at a northern community hospital. It focused on enhancing the quality of mammography films through the use of optimal positioning, mammography techniques for women with augmented breasts, and American College of Radiology mammography facility accreditation issues. During the program, presenters gave didactic talks, showed instructional videos, and provided "hands-on" training.

Of the 39 clinical mammographers employed by area radiology facilities, 38 (97 percent) attended the educational program. As with the medical office staff training sessions, we asked participants to evaluate the overall program on a 5-point scale (where 1 was

Medical Community Analysis Methods and Objectives Washington Community Breast Cancer Screening Project 1989–93

Method	*Objective*	
	General	*Specific*
Demographic study	Describe infrastructure of the health care delivery system	Assess primary care and mammography resources
Primary care physician survey	Describe barriers to mammography ordering	Assess educational and reminder system needs
Physician interviews	Describe past, present, and planned community breast cancer screening activities	Assess interest in breast health issues and readiness for involvement
	Describe local issues with respect to mammography	Assess problem-solving needs
	Describe medical organizations and meetings	Identify possible information dissemination channels
	Describe medical community relationships	Assess barriers to a collaborative effort
	Describe interest in potential project activities	Identify useful interventions
	Identify influential physicians and individuals with an interest in breast cancer screening	Identify physicians who should be involved in program planning
Office staff focus groups	Describe knowledge about breast cancer screening and health promotion skills	Assess educational and skills training needs

not very valuable and 5 was very valuable). The average evaluation score was 4.5, and two-thirds (66 percent) of attendees indicated they found the program very valuable.

Reminder system support. The physician survey demonstrated that many physicians did not have reminder systems for mammography, and physicians expressed interest in reminder system assistance during the interviews. Consequently, the physician planning groups in both communities adopted this intervention. We mailed a reminder system needs-assessment questionnaire to all non-HMO primary care providers, sent a packet detailing available manual and computerized systems to physicians who requested further information, and assisted interested physicians in implementing reminder systems in their practices. This intervention will be the subject of a future report.

Discussion

The Washington CBCSP incorporated multiple intervention activities, targeting both women and health care providers. We are evaluating the project as a whole through surveys of women that allow assessments of behavior change in intervention and control counties over time. This methodology permits assessment of the effectiveness of the project as a whole, but it precludes outcome evaluation of the independent and interactive effects of specific intervention components. However, our postintervention women's and primary care physician surveys will be used to provide process evaluation of the CBCSP.

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Implications for practice. Our community analysis helped us tailor the health care sector intervention programs to local needs. For example, we had

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originally considered holding a "kick-off" continuing medical education event in each of the two intervention counties. Information from the physician survey and interviews indicated that this would probably not be a useful project activity in either area. The survey and focus groups also guided the content of specific health care sector activities (for example, the office staff training sessions). Although the physician survey was conducted by a research institution in this instance, simple needs-assessment questionnaires could be sent to hospitals, public health departments, and voluntary organizations involved in disease prevention programs that target physicians. In addition, focus groups of health care professions can usually be organized cheaply, easily, and quickly (*27*).

During the interviewing process, we identified several potential barriers to successful program implementation. For example, the NCI recommends annual mammograms for women ages 50 or older (*28*). In contrast, the U.S. Preventive Services Task Force specifies women in this age group who are at low risk of breast cancer may be screened every 2 years (*2*). Primary care physicians who followed the latter guidelines were concerned about local promotion of the NCI recommendations. We addressed this problem by routinely disseminating the guidelines of both organizations.

Process measures indicate that our medical community mobilization efforts were successful. Most physicians were willing to meet with project staff during the interviewing process, and to participate in the CBCSP as planning group members. Given the busy schedules and conflicting demands of practicing physicians, attendance at physician planning group meetings was relatively high. Moreover, several planning group members contributed an appreciable amount of time to various project activities.

Early reports from the 11 cities targeted by the Community Intervention Trial for Smoking Cessation show methods useful in one town may be less successful in others (*29,30*). In the CBCSP, a somewhat higher proportion of medical office staff members in the northern community actually attended educational sessions. We attribute this to the fact that more southern community physicians practice in large clinics whose staff members are not as likely to attend as those in small clinics or private practices (*23*). Although we had not considered a clinical mammographer educational program initially, process measures indicate this was a highly successful activity. While not expected to have a direct impact on women's participation in mammographic screening, this intervention stimulated project involvement by the area's clinical mammographers.

Conclusion

The role of physicians in community-wide programs for the prevention of cardiovascular disease has been reported by the Minnesota Heart Health Program. In this study, physicians served as advisors about medical matters and served on community advisory boards. Intervention activities targeting physicians included continuing education workshops and presentations at regular physician meetings (*31*). Our experience indicates that physicians practicing in medium-sized cities are also willing to be involved in community cancer prevention projects. In both our intervention areas local physicians participated actively in program planning and contributed to a wide range of project activities. Further research is needed to see if physicians practicing in other settings, such as large urban areas, can be similarly engaged in disease prevention efforts.

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